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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,102

05/19/2006

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Q94656

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23373 7590 04/03/2009
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EXAMINER

KASHNIKOW, ERIK

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

04/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1, 2, 4-6, 8 and 13-16 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4, 6 and 11-14 of copending Application No. 11/579,619 in view of Bastioli et al (US 5,512,378). The claims in the copending application teach all the limitations of the starch materials in Applicant's instant application. Although claims 1-13 are drawn to composition and not bowl, given that it is disclosed that the composition is "for a biodegradable starch bowl", it would have been obvious for one of ordinary skill in the art to use the composition to form a bowl as presently claimed. The copending application is silent regarding a film or sheet attached to the starch composition. Bastioli et al. teach that it is known in the art to attach biodegradable sheets comprising polyvinyl alcohols and a polycaprolactam

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to biodegradable starch package compositions (column 1 lines 5-9 and column 3 lines 6-15 and 25-27). One would be motivated to use this biodegradable sheet of Bastioli et al. because water barrier protection (column 1 lines 38-41).

This is a provisional obviousness-type double patenting rejection.

Claims 1-16 directed to an invention not patentably distinct from claims 1-14 of commonly assigned application 11/579,619. Specifically, see above paragraphs for details.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 11/579,619, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 8 recites the limitation "the photo catalyst" in second line. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 4-6, 8, 14-17, 19-22, 24, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al.(US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910), Matsuda et al. (US 6,183,596), Levey (US 2,137,169) and Kuroda et al. (US 5,786,406).
8. Bastioli et al. teach a biodegradable article comprised of a starched base material and a biodegradable film thereon (column 1 lines 5-9).

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9. In regards to claims 1, 4, 14 and 15 Bastioli et al. teach that the base material comprises unmodified maize (another word for corn) starches (column 4 lines 1-10). Bastioli teaches that the starches may be combined with polymeric materials or plasticizers (column 3 line 42 to column 4 line 21). Bastioli et al. teach that the starch is present in a concentration of 37% by weight (example 1). Bastioli et al. teach that water may be added to the composition in concentrations between 1 and 50% (column 4 lines 17-21). Bastioli et al. also teach a second biodegradable layer attached to the starch layer (column 6 lines 43-46). In regards to the limitation that the bowl is "prepared to have a desired shape by heating and pressurizing" Examiner is treating it as a product by process claim. It has been shown that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process (MPEP 2113 and *In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964, 966).

10. In regards to claim 2 Bastioli et al. teach that the film comprises up to 90% a polyvinyl alcohol, or a polycaprolactone (column 3 lines 6-15 and 25-27).

11. While Bastioli et al. teach the biodegradable article they are silent regarding the article being a bowl, however it would be obvious to one of ordinary skill in the art at the time of the invention that a bowl is a type of container or package, and one would be

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motivated to put the article in bowl form depending on that which the article is designed to hold.

12. While Bastioli et al. teach the biodegradable article they are silent regarding the use of mould release agents and cellulose fibers.

13. In regards to claim 1 George et al. teach a biodegradable polymer composition capable of being formed into packaging materials (column 1 lines 10-19). George et al. teaches that the compound comprises starch (column 1 lines 10-20). George et al. teach that a lubricant, specifically magnesium stearate can be added to the starch in 1-10% of the starch composition (column 9 lines 1-17). George et al. also teach fillers such as fibers being added to the composition in amounts of 20-60% which overlaps with applicant's range (column 8 lines 62-68).

14. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli et al. with that of George et al. because the invention of Bastioli et al. which offers effective liquid gas and vapor barriers (column 1 lines 5-10) would benefit from the uniform melt formation of the article of George et al.

As stated above George et al. and Bastioli et al. teach biodegradable containers comprising starch and a biodegradable film, however they are silent regarding the addition of titanium dioxide.

15. While Bastioli et al. teach the biodegradable article they are silent regarding the presence of titanium dioxide.

16. In regards to claim 7 Sanbayashi et al. teach the use of titanium dioxide which comprises some anatase (paragraph 0020) are known in the art at the time of the

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invention to be used in natural polymers (claim 19) such as starch (paragraph 0061) used in containers (claim 27). Sanbayashi teach that the titanium dioxide is present in 0.01-80% of the entire composition (paragraph 0035). In regards to the concentration of the anatase absent a showing of criticality with respect to "anatase concentration" (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the "anatase" through routine experimentation to values, including those presently claimed in order to achieve "excellent photo-chemically catalyst". It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). The recitation in the claims that the titanium dioxide is "for sterilizing and deodorizing" is merely an intended use. Applicants attention is drawn to MPEP 2111.02 which states that intended use statements must be evaluated to determine whether the intended use results in a structural difference between the claimed invention and the prior art. Only if such structural difference exists, does the recitation serve to limit the claim. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is the examiner's position that the intended use recited in the present claims does not result in a structural difference between the presently claimed invention and the prior art and further that the prior art structure is capable of performing the intended use. Given that Sanbayashi et al. disclose titanium dioxide as presently claimed, it is clear that the titanium dioxide of Sanbayashi et al. would be capable of performing the

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intended use, i.e. sterilizing and deodorizing, presently claimed as required in the above cited portion of the MPEP.

17. In regards to claims 8 and 24 Sanbayashi et al. teach that the titanium dioxide is doped with Platinum (paragraph 0052).

18. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli and George with that of Sanbayashi et al. because the invention of Sanbayashi et al. offers excellent industrial applicability (paragraph 0013). While Bastioli et al., George and Sanbayashi et al. teach the biodegradable article they are silent regarding the presence of a preservative.

19. In regards to claims 1 and 16 Levey teach the use of 1/30th-4% of an antimycotic preservative present in starch products (page 4 second column lines 20-29). Levey further teaches sodium benzoate as one such preservative (page 4 1st column lines 45-50)

20. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli, George, and Sanbayashi et al. with Levey because the invention of Levey offers inhibition of the decay of organic matter as well as retard the growth of mold, bacteria, fungi and protozoa (page 4 1st column lines 63-66).

21. As stated above Bastioli, George, Sanbayashi and Levey teach a biodegradable bowl comprised of starch and a film attached thereto, however they are silent regarding the length of the pulp fiber material as well as the composition of the pulp fiber material.

22. Matsuda et al. teach compositions comprising pulp fibers and various starches (column 9 lines 53-60).

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23. In regards to claim 5 Matsuda et al. teach that the fibers have lengths of no more than 50 μm which is within Applicant's range (column 9 lines 30-32).

24. In regards to the powder limitation of claim 1, since the same materials are taught in the same sizes as those presently claimed, then the fibers would therefore also be in powder form. It is also pointed out that since all the materials are taught by the references, including the starch, and the bowls are made in the same manner then the anion meq would intrinsically be the same.

25. In regards to claim 6 Matsuda et al. teach that broad leaf fibers are a preferred fiber for their invention (column 5 lines 15-24).

26. It would have been obvious to one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli George and Sanbayashi et al. with Matsuda et al. because Matsuda et al. offers the ability to dye, pigment or tint a cellulose product with ease (column 3 lines 9-14).

27. As stated above Bastioli, George, Sanbayashi, Matsuda, and Levey teach a biodegradable bowl comprised of starch and a film attached thereto, however they are silent regarding the thickness of the biodegradable layer, as well as the method of forming the article.

28. Kuroda et al. teach biodegradable molded articles (column 1 lines 5-10) comprising a biodegradable film.

29. In regards to claim 1 Kuroda teaches it is known in the art for biodegradable films to have a thickness of 5-200 micron which overlaps with applicants range (column 13 lines 1-10). Examiner points out that the term "for water resistance", a recitation of the

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intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

30. In regards to claims 16 and 19 Kuroda et al. teach that vacuum forming is a commonly used method for forming the articles of their invention (column 12 lines 36-40).

31. In regards to claims 17, 20-22, 24, 30 and 31 all the limitations in the claims have been discussed above.

32. One of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli, George, Sanbayashi, Matsuda and Levey with Kuroda et al. because Kuroda et al. offers ease of adjusting the films for a wide variety of uses (column 13 lines 1-3).

33. Claims 13 and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Bastioli et al. (US 5,512,378) in view of George et al. (US 5,393,804) Sanbayashi et al. (US 2002/0160910) Matsuda et al. (US 6,183,596) Levey (US 2,137,169) and Kuroda et al. (US 5,786,406) (US 3,954,104) as applied to claims 1 and 16 above and in further view of Shogren et al. (US 6,146,573).

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34. As stated above Bastioli, George, Sanbayashi, Matsuda, and Levey teach a biodegradable bowl comprised of starch and a film attached thereto, however they are silent regarding the combination of monostearyl citrate and magnesium stearate. Shogren et al. teach the inclusion of monostearyl citrate and magnesium stearate in starch compositions to act as releasing agents. While they are silent regarding specific concentrations of the two, it has been found that absent a showing of criticality with respect to "ratios of the releasing agents" (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the "concentrations of the releasing agents" through routine experimentation to values, including those presently claimed in order to achieve "a concentration that works as an effective releasing agent for starch substances". It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

35. It would have been obvious to one of ordinary skill in the art at the time of the invention would be motivated to modify the invention of Bastioli, George, Sanbayashi, Matsuda, and Levey with Shogren et al. because Shogren et al. offers protection against problems of adhesion between the starch compositions and the molds (column 26 lines 17-20).

Response to Arguments

36. In response to Applicant's arguments concerning the double patenting, until such time as the instant application is in condition for allowance, the double patenting rejection will be maintained as set forth above.

37. In response to Applicant's argument that the addition of Kuroda et al. to teach the thickness of the film is improper because Kuroda et al. are silent regarding the benefits with regards to water resistance, Examiner points out that the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. In other words it is permissible to have different motivation to combine references then the motivation preferred by Applicant (See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

38. In regards to Applicant's arguments regarding the film of Bastioli et al., Examiner first points out that in response to the amendments the rejection has been modified to further include Kuroda et al. Secondly Examiner points out that Example 2 as pointed to by Applicant's does offer water resistance by decreasing the amount of water that is able to permeate to the starch layer.

39. In response to Applicant's arguments concerning the starch in the George et al. reference Examiner notes that while George et al. do not disclose all the features of the present claimed invention, George et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re*

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Keller 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references. Examiner further points out that Applicant has shown no reason as to why the lubricant taught by George et al. would not work in both a native and converted starch.

40. In response to applicant's argument that Matsuda et al. teach the cellulose material may be added for being used as a carrier dye or pigment, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. In other words the fact that the motivation to combine is different from Applicant's is allowable. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). It is pointed out that as the primary reference, Bastioli et al. do teach pigments (column 2 lines 60-62) one of ordinary skill in the art at the time of the invention would have been motivated to modify Bastioli et al. with Matsuda for the reasons set forth above.

41. In response to applicant's argument that the titanium dioxide of Sanbayashi et al has a different constitution and use than that of the instant invention, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. In other words the fact that the motivation to combine is

different from Applicant's is allowable. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

42. In regards to Applicant's arguments concerning the anatase and rutile concentration of the Sanbayashi reference Examiner points to paragraph 20 of Sanbayashi where the reference teaches that at least one of the titanium dioxide crystal types is used, including anatase, which leaves open the possibility wherein all anatase is used, which would fall within Applicant's range. Examiner further points out that while Sanbayashi et al. were silent with regards to anatase concentration, the previous office action pointed out that it would be obvious to optimize the anatase concentration.

43. In regards to Applicant's arguments regarding the Shogren reference, as set forth in MPEP 716.02(d), whether unexpected results are the results of unexpectedly improved results or a property not taught by the prior art, "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support". In other words, the showing of unexpected results must be reviewed to see if the results occurred over the entire claimed range, *In re Clemens*, 622F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). Applicants have not provided data to show that the unexpected results do in fact occur over the entire claimed range of 20-60 wt% starch, 5-30 %pulp fiber or 30-60% of solvent. Further it is pointed out that the data is not commensurate in scope with the scope of the present claims given that all the examples utilize preservative that is potassium sorbate while the present claims now require preservative that is sodium benzoate or sodium propionate.

Conclusion

44. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ERIK KASHNIKOW whose telephone number is (571)270-3475. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (Second Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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